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ABSTRACT

This paper suggests ways in which educators can help students develop responsibility, as well as academic skills and intellectual growth. The four steps in decision-making are outlined to show that decision and action should follow logically once the behavior and its consequences have been identified. A technique referred to as contracting is suggested to provide the format for teachers to help children learn a responsible decision-making procedure. Three rules for changing academic and social behaviors are outlined, using operant conditioning, i.e.,: (1) reinforcing a desired behavior increases its reoccurrence; (2) most effective reinforcement occurs immediately after the behavior; and (3) target behaviors frequently need to be developed through a series of successive approximations of the terminal target behavior. (JAC)

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Contingency Contracting: A technique for developing responsibility and self-control

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While the principle goal of educators may be to develop academic skills and foster intellectual growth, a secondary goal may well be the development of what will be termed responsibility. In the classroom this may be demonstrated in the child completing assignments or handing in homework on time. Many teachers harbor silent hopes that this responsibility will generalize or transfer beyond the boundaries of the school and be reflected in the child's performance in the greater community. Homme (1974) suggests that this sense of responsibility may be developed over a period of time. In order for the child to develop responsibility the child must first become aware of the cause-effect relationship. To do this the child identifies a situation which needs some action. The child then specifies alternatives, usually limited to two at first. Each alternative must be linked with a corresponding consequence. The decision the child makes is determined by the consequence the child desires and thus some action results from the decision. The child thus learns that he/she has some control over the environment. This process might be simplified in the following manner:

Problem =	1st choice	1st consequence	decision	desired
	2nd choice	2nd consequence	action	outcome

In viewing these four steps it is important to realize that the decision and action resulting should follow logically once the behavior and its consequence have been identified. Frequently, however, the behavior and its consequence are not readily identified or isolated by the child and the plan of action becomes more difficult to determine. The end is clouded by not knowing where to begin.

Everyday children must make decisions and face the consequences of their decisions, i.e. act responsibly. Frequently, for each situation there are at least several alternatives and consequences (positive or negative). While it may be abundantly clear to the teacher or adult that one choice will result in a particular positive consequence while another choice will result in a negative consequence, it is not always so crystal clear to all children which behaviors will match which consequences.

How can educators help to facilitate appropriate decision-making which will result in successful outcomes and positive actions? A technique referred to as contracting may provide the format for teachers to help children move from a haphazard choice process to a responsible decision making procedure. A teacher skilled in implementing contracts may carefully develop in children the ability to identify behaviors and consequences and develop logical

plans of actions for school related activities. Not only does the child become responsible for his/her school activities but also the child has skills for making responsible independent decisions outside of school.

Contingency contracting is an outgrowth of operant conditioning. Operant conditioning, with its specific rules for changing behavior can be readily translated into practical guidelines for use by classroom teachers. Several of these rules or principles provide the foundation of contingency contracting.

A growing body of research in the field of learning theory suggests procedures for the development of independent and responsible decision making behavior. Three basic rules for changing academic and social behaviors have been identified by operant theorists. These rules are: 1) reinforcing a desired behavior after it occurs will tend to increase the probability of that behavior reoccuring. 2) reinforcement is most effective when it is applied immediately after the behavior occurs; and 3) target behaviors frequently need to be developed through a series of successive approximations of the terminal target behavior. All three rules can be readily translated into techniques for use by classroom teachers.

The first rule suggests that desired or appropriate academic and social behavior, i.e. completion of papers,

increased spelling proficiency, in-seat behavior or raising hands to ask questions can be readily developed by reinforcing or in some way positively recognizing these behaviors when they occur. The behavior may be reinforced by praising the child after the child does a worksheet or by giving the child points or tokens after each successfully completed page. Tokens and points may be collected for later use, for example fifteen minutes of free time or for extra recess. There is considerable data in the literature which demonstrates successful results of positive reinforcement techniques. Becker, Masden, Arnold, and Thomas, (1967); Ward & Baker, (1968); Zimmerman and Zimmerman, (1962) represent studies which effectively used praise and teacher attention as reinforcement and O'Leary, Becker, Evans and Saudargus, (1969); Birnbrauer, Wolf, Kidder & Tague, (1965); and O'Leary & Becker, (1969) have demonstrated the effectiveness of token reinforcement.

Blackham and Silverman (1975) suggest that reinforcement occur immediately after the response until the desired behavior has been fairly well established. Suinn, (1970) suggests that responses that occur immediately prior to the reinforcement are strengthened and there is an increased probability of that response occuring again. Hammill and Bartel (1978) reports that for behaviors that do not occur frequently, a continuous fixed ratio schedules

of reinforcement should be used, where every behavior or response elicited is immediately reinforced. Teachers need to develop a simple management system wherein it is possible to reinforce a behavior as soon after its occurance as possible. It is important that the reinforcer be contingent on a behavior and not on a time factor. Ultimately, once behaviors are firmly established, delayed reinforcement is possible. Many contingency management programs have influenced the development of delayed gratification by encouraging students to save the tokens they had earned. Savings accounts have been established at school banks where interest on savings could be accrued. Since savings produce better returns, this procedure encourages delayed gratification.

A third principle in operant theory suggests that learning (growth) occurs in small steps, approximately some larger target goal or terminal behavior (Suinn, 1970). The reading process illustrates this principle. We learn to read stories by first identifying letters and later putting these letters together into the simplest words. Words become more complicated and then sentences are formed in this learning process. Self-discipline and social behavior is likewise developed over extended periods of time, reinforcing small successive approximations of that terminal behavior.

Another more specific example of successive approximations can be the development of attending behavior. If a child has a very short attention span, it would be unrealistic to expect the child suddenly to be able to attend for 30 minutes at a time regardless of how appealing the reinforcement. A realistic way to develop the target behavior of 30 minutes of attending would be to expect five minutes of attending with consequent reinforcement. Once five minutes of attending has been established with consistency over a period of time, then the time expiation may be extended to 10 minutes, then 15 and on until the target behavior of 30 minutes, once thought to be an impossible goal, is achieved.

Contingency contracting as a technique to develop academic and social behaviors uses a refinement of the basic three rules of operant conditioning (Russ, 1974). Permack (1965) observed that subjects engaged a variety of unexpected activities in an experimental situation when given numerous choices. By making a involvement in a pleasant activity (or a high probability behavior) conditional upon engagement of a less rewarding activity (or a low probability behavior), it is possible to increase the level of occurance of a low probability behavior.

The principle of Premack's has been translating into practical techniques by Homme (1974). The Premack principle

of "Grandma's Law" can be stated as, "First you finish your dinner, then you get dessert" or "First you do three pages of arithmetic and then you can have five minutes of free time." In these examples, both "eating dinner" and "doing three pages of arithmetic" are low frequency responses. Children, if left to their own devices, would not finish dinner or complete their arithmetic. These are low probability behaviors.

We can use those activities children naturally enjoy doing as reinforcers to increase the occurance of those activities which children naturally would not engage in at any high rate of frequency. Stated another way, we can increase the occurance of activities children don't like to do with activities they do enjoy doing.

In applying "Grandma's Law" or the Premack principle, it is important to remember the basic three rules of behavior management discussed earlier. The first stated that positive reinforcement of behavior would tend to increase the rate of occurence of that behavior. Those activities which children like to do in school and choose to do during free time become the reinforcement. And this reinforcement follows some behavior or activity (like completing math worksheets or learning spelling words) that children are less inclined to do on their own. Teachers may use these high occuring behaviors to reinforce

less frequent occuring behaviors. Teachers may reinforce the correct completion of a worksheet or fifteen minutes of in-seat behavior with five minutes of free time or five minutes of working a puzzle.

Timing is important. The successful completion of a law probability behavior should be followed by involvement in a high probability behavior. Homme (1974) and Klause (1969) stress that reinforcement should be immediate early in the contracting process to develop a high rate of occurance of low probability behaviors. Once behaviors are firmly established, points or tokens which are accumulated over time by students to purchase or be exchanged for free time or other special reinforcing events. Savings accounts have been established at some schools where interest on saved tokens could be accrued. Thus while initially reinforcement needs to follow immediately the behavior being developed, receipt of the reinforcing activity may be delayed once the law probability behavior is occuring at a steady rate.

The third, earlier discussed rule, is that of successive approximation. It is important to realize that if a child has been doing poorly in math or jumping out of his seat all the time, in-seat behavior or 100% correct math papers will not appear. It takes time to develop and change specific behaviors. It may be more realistic to

develop behaviors slowly one step at a time, for example first five math problems and then 8 or 10 rather than all 30 at once. But each step should be reinforced until the terminal behavior is acquired.

There are several instruments which are collecting the data essential for beginning a program. The teacher, however, first must develop the skill of observation. Many assume that this skill is innate to all of us, but it may be more likely that we see what we have been reinforced to see. Observation skills can be sharpened by practice in identifying specific behaviors and recording rate or frequency of accurance. While initially this activity may appear too time consuming or impractical, continued practice will foster ease and skill in this procedure.

The Premack principle and the three basic rules are formalized into a contract between teacher and student. The contract consists of a precisely written statement containing what the child must do in order to receive a specifically named reinforcement. Clarity in contracts is made easy by using concise language which is highly specific. Clarify and preciseness can be obtained by always including the following components: who, what, where, when and how well.

1. Who will perform the behavior and who will deliver the reward?
2. What is the behavior: The behavior should always be stated in very specific terms that are both observable and countable.
3. Where will the behavior take place?
4. When will the behavior be performed? Children often set up the teacher by performing the behavior after the stated time. Although the behavior may be appropriate, it was not and should not be reinforced.
5. How well do we expect the behavior to be performed? Specific criteria is an essential ingredient of a good contract. Frequently the criterion for success is rate or percent of accurate responses. The absence of accuracy may lead children to see only completion of the task as the goal, often leading to haphazard working styles (Malot, 1973).

EXAMPLE:

Poor "If Johnny is good today in math, Mr. Smith will give him some time off."

Better "John agrees to complete five pages of math problems assigned by Mr. Smith during math period and score 85% or better on each page. Mr. Smith agrees that upon completion of John's portion of this

contract, John will earn from Mr. Smith 10 minutes of time in the free choice area, not to exceed the end of math class.*

The manager in contracting must act in a positive manner with positive behaviors and rewards. Simply not punishing for not being "bad" will not do. Sidns that say, "Don't Run" both keep us from doing something and keep that something in the forefront of our minds. Negative contracts do not promote positive behavior; positive contracts do promote positive behavior (Homme, 1974).

Associated with the concept of positive contracting is the issue of following orders vs. performance of present tasks. Following orders necessitates that there be someone available to give orders and observe their completion. Many managers are opposed to this. However, a case for this procedure can be made with a child who is either very agressive or one who appears to be asocial. Following orders may very well be a prerequisite to behaviors of independence later on.

For most children, however, rewarding completion of a task is a more appropriate procedure. The major benefits are long term. The child associates the success with the child's own decision. Success reinforces decision making, for nothing succeeds like success. Also, a possibly more importantly, the child begins to self-manage. This is a critical step toward independent living because there will not always be someone

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*NOTE: Sometimes it does take a few more words to say it correctly, but it reduces arguing time later by a substantial degree.

present for the child to obey. The child who has been reinforced for obedience will do little without an order. The child rewarded for accomplishment can become a self-starter, and a self-reinforcer. The concept of rewarding accomplishment vs. rewarding obedience is obviously made here will effect the child's quality of life.

A critical point both from a practical, as well as ethical perspective, is the experimental use of contracting. Those responsible for the education of children must make individual choices based upon the predicted outcome of an action on the child and on themselves. Teachers who are uncomfortable with contracting need to rethink their position before any move to contracting is taken. A well thought out program is essential. A program that is on trial for a week or two will fail. It is also be unethical to expose a child to a success oriented system and then remove that system just as the child begins to make gains. Programs must have the committment of the manager for at least one semester. A teacher once confided that she was somewhat uncomfortable with contracting at her school. Her concerns were discussed and she agreed to try it from September to Christmas holidays. By Christmas she had decided she would never again teach <u>without</u> contracting as a part of her teaching system.

The teacher who wishes to contract with children in the class must first accept the idea that through the process of developing responsibility for one's own behavior, the child must begin to maintain the control and governance of that behavior (Bandura, 1969). Simply put, if we wish the child to

become responsible for his behavior then the child must have the power to make choices. This combination of power and responsibility is in fact the cornerstone of a democratic society.

The purpose of public education, both regular and special, is to promote and facilitate the growth of a citizenry that can maintain the free status of the country. Characteristics of such a citizenry must include independence, self-reliance, and an ability to make appropriate and effective decisions. Contingency contracting, utilized in a systematic developmental manner, and combined with other proven academic processes, could assist in the completion of the goal.

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